

REMARKS

Claims 1-17 are pending and under consideration.

Claims 1-3, 6-10, and 12-17 are rejected under 35 U.S.C. §102(b) as being anticipated by JP 7-308087; and claims 3-5 and 11 are rejected under 35 U.S.C. §103(a) as being unpatentable over JP 7-308087 in view of JP 11-206184, or Ono (U.S.P. 6,653,806), or FIG. 1 of the present application labeled as Prior Art.

The rejections are traversed.

JP 7-308087 discusses (Abstract) a braking circuit having a first relay, i.e., relay 2 to limit rush current and a second relay, i.e. relay 6 for dynamic braking.

JP 11-206184 discusses (Abstract) inverter control equipment including an inverter, a smoothing capacitor, diode bridges, a three-phase AC power source, a contact for break, a servomotor and a constant current circuit.

Ono discusses a dynamic brake circuit including a semiconductor inverter.

An *arguendo* combination of JP 7-308087 and JP 11-206184 teaches a braking circuit having a two relays to limit rush current and for dynamic braking and an inverter, a smoothing capacitor, diode bridges, a three-phase AC power source, a contact for break, a servomotor and a constant current circuit.

An *arguendo* combination of JP 7-308087 and Ono teaches a braking circuit having a two relays to limit rush current and for dynamic braking including a semiconductor inverter.

FIG. 1 of the present application shows a dynamic braking unit with two relays and an inverter.

JP 11-206184 discusses (Abstract) inverter control equipment including an inverter, a smoothing capacitor, diode bridges, a three-phase AC power source, a contact for break, a servomotor and a constant current circuit.

An *arguendo* combination of JP 7-308087 and Ono teaches a braking circuit

ITEM 1: REJECTION OF INDEPENDENT CLAIMS 1, 6, AND 7 (AND DEPENDENT CLAIMS 2-3, 8-10, and 12-17) UNDER 35 U.S.C. §102(b) AS BEING ANTICIPATED BY JP 7-308087

Independent claims 1 and 6, using claim 1 as an example recite a device for inrush current prevention and dynamic braking including "a diode rectifying unit rectifying power supplied from an AC power supplying unit; a capacitor smoothing the power rectified by the diode rectifying unit; a resistor disposed between the AC power supplying unit and the capacitor,

being connected to the capacitor; an inverter, connected to first and second terminals of the capacitor and the power inputting terminals of the motor, inverting the smoothed power from the capacitor into an AC power having multiple phases and supplying the AC power having the multiple phases to the motor; a dynamic braking circuit short-circuiting the power input terminals of the motor; and a relaying unit including a first node to connect the dynamic braking circuit to the resistor and a second node connecting the rectifying unit to the capacitor in parallel."

Independent claim 7 recites a device for inrush current prevention and dynamic braking including "a relay to connectably switch one of the dynamic braking circuit to one end of the resistor, and the rectified power supply to the capacitor in parallel."

Applicant submits that the art relied on does not discuss recited features of the present invention including, for example a relaying unit including a first node to connect the dynamic braking circuit to the resistor and a second node connecting the rectifying unit to the capacitor in parallel.

That is, the present invention can perform inrush current prevention and dynamic braking with one relaying unit or relay. Thus, manufacturing costs are decreased and effectiveness is increased. JP 7-308087 discusses a two relay device.

Further, features recited by the dependent claims are not discussed by the prior art. For example, dependent claim 3 recites that the dynamic braking circuit includes "a plurality of inverting circuits, respectively, connected, in parallel, to the capacitor, and each of the inverting circuits has a pair of inverting elements comprising: a transistor; and a diode connected to the transistor, in parallel; and each of the power inputting terminals of the motor is connected between the inverting elements of each of the inverting circuits."

JP 7-308087 does not discuss any such inverting circuits.

Dependent claim 10 recites that the dynamic braking circuit includes "dynamic braking diodes, respectively, to connect one end thereof to each other and a remaining end thereof to a respective one of the inputting terminals of the motor, the dynamic braking diodes are connected to each other in a forward direction."

JP 7-308087 does not discuss any such connection of diodes.

Conclusion

Since features of independent claims 1, 6, and 7 (and dependent claims 2-3, 8-10, and 12-17) are not discussed by JP 7-308087, the rejection should be withdrawn and claims 1-3, 6-10, and 12-17 allowed.

ITEM 7: REJECTION OF CLAIMS 3-5 AND 11 UNDER 35 U.S.C. 103(a) AS BEING UNPATENTABLE OVER JP 7-308087 IN VIEW OF JP 11-206184, OR ONO (U.S.P. 6,653,806) OR PRIOR ART FIG. 1.

Dependent claim 3 recites that for the device according to claim 2 the device according to claim 2, wherein: the inverter comprises: "a plurality of inverting circuits, respectively, connected, in parallel, to the capacitor, and each of the inverting circuits has a pair of inverting elements comprising: a transistor; and a diode connected to the transistor, in parallel; and each of the power inputting terminals of the motor is connected between the inverting elements of each of the inverting circuits."

Dependent claim 4 recites that for the device according to claim 3 "at least one of the pair of dynamic braking diodes connected to each power inputting terminal of the motor in forward and reverse directions is replaced with a diode of the inverting element connected to the resistor, among the pair of inverting elements of each inverting circuit."

Dependent claim 5 recites that for the device according to claim 4 "the relaying unit is connected to the first node when power is initially applied, allowing the power rectified by the diode rectifying unit to be transmitted to the capacitor through the resistor."

Dependent claim 11 recites that the device according to claim 7 includes an inverter having "a plurality of inverting circuits, respectively, connected, in parallel, to the capacitor, and each of the inverting circuits has a pair of inverting elements comprising: a transistor; and a diode connected to the transistor, in parallel; and each of the inputting terminals of the motor is connected between the inverting elements of a respective one of the inverting circuits."

The Examiner rejects claims 3-5 and 11 under 35 U.S.C. 103(a) as being unpatentable over JP 7-308087 in view of JP 11-206184, or Ono (6,653,806), or Prior Art Figure 1. The Examiner contends that:

JP 11-206184, Ono, and Prior Art Figure 1 show the transistor and the diode connected to the transistor in parallel, and the dynamic braking circuit is separate units. Since the use of transistor and diode connected in parallel or a separate dynamic braking circuit in alternative is notorious old in the art, it would have been obvious to modify the Japanese publication JP 7-308087 with a separate dynamic braking circuit as taught or suggested by JP 11-206184, or Ono, or Prior Art Figure 1 in place of the dynamic braking circuit 8 of the Japanese publication 7-308087.

(Action at page 3).

Applicants submit there is no motivation to combine the art in a manner as suggested by the Examiner. JP7308087 discusses (Abstract) the purpose of the invention is to provide a braking circuit that "is simply constituted at low cost." Any of the suggested combinations by the Examiner would involve a redesign of JP7308087 and an increase in complexity and cost.

As provided in MPEP §2143 entitled Basic Requirements of a *Prima Facie* Case of Obviousness:

(t)he teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Conclusion

Since there is no suggestion to make claimed combination as the Examiner contends and *prima facie* obviousness is not established, the rejection should be withdrawn and claims 3-5 and 11 allowed.

CONCLUSION

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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